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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,951	10/06/2006	Osamu Niwa	SAEG124.004APC	1688

20995 7590 04/21/2009  
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EXAMINER
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KAHN, RACHEL

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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04/21/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/560,951	<b>Applicant(s)</b> NIWA ET AL.	
	<b>Examiner</b> RACHEL KAHN	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 16 March 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-8,10,12-14 and 21-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-8,10,12-14 and 21-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Any rejections stated in the previous Office Action and not repeated below are withdrawn.
3. The new grounds of rejection set forth below are necessitated by applicant's amendment filed on 3/16/09.
4. It is noted that the newly introduced limitations were not present at the time of the preceding action. For this reason it is proper to make the present action FINAL.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **1, 3-6, 10, 12, 13, 14, 21-24 and 27-30 and 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuriu** (WO00/56548, the US patent equivalent, 6645640, will be cited herein) in view of **Yamamoto** et al (JP 11-199741).

Regarding instant **claims 1 and 10**, Kuriu discloses a multilayered film consisting of three layers: a polyamide layer, a saponified ethylene-vinyl acetate layer, and a

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polyamide layer (columns 3-4, examples 1 and 2). In Example 2 (column 4, lines 9-17), Kuriu teaches that the polyamide layers comprise aliphatic polyamide (nylon-6) as the principal ingredient (86.0 wt %) and aromatic polyamide (poly(m-xylylene adipamide) in an amount of 10 wt %.

Kuriu fails to teach that the saponified ethylene-vinyl acetate copolymer layer comprises polyamide resin and an alcohol based compound.

Yamamoto discloses a composition which has excellent retort resistance comprising saponified ethylene vinyl acetate (herein EVOH) mixed with a polyamide resin and an alcoholic compound. (English patent abstract and [0004] of machine translation). Yamamoto teaches that this composition may be formed into a film or sheet [0011] and that other materials may be layered on one or both sides [0012].

Yamamoto teaches that EVOH is commonly used as packaging in the food industry, yet it is flawed in terms of its heat resistance, shock resistance and stiffness [0002]. Yamamoto discloses that it is known in the art to blend polyamide resin with EVOH to improve the aforementioned flaws [0002]. It would be obvious, therefore, to one of ordinary skill in the art to blend polyamide with EVOH in order to improve the heat and shock resistance, as well as stiffness, of the film. However, Yamamoto further teaches that EVOH/polyamide compatibility issues lead to deterioration of physical properties [0003]. Yamamoto teaches that such compatibility issues can be resolved by adding an alcohol-based compound [0004]. It would be obvious, therefore, to one of ordinary skill, to add alcohol to film comprising a blend of EVOH and polyamide, in order to avoid deterioration of physical properties due to incompatibility.

Yamamoto and Kuriu represent analogous art. Both disclose multilayer films comprising polyamide and EVOH layers for use in food packaging. Furthermore, both are attempting to reduce stiffness in film layers (Kuriu teaches that softening improves pinhole resistance - col 1, lines 19-25). Given Yamamoto's teaching that the physical properties of EVOH, including stiffness, can be improved by adding polyamide and alcohol, it would be obvious to one of ordinary skill in the art to modify the EVOH layer taught by Kuriu (as in example 2) by adding polyamide and alcohol, as taught by Yamamoto, in order to improve the heat and shock resistance, and overall stiffness of the multilayer laminate.

Regarding **claims 3 and 21**, Yamamoto teaches the addition of silica to the EVOH resin system [0011].

Regarding instant **claims 4 and 22**, Yamamoto discloses that the composition is prepared by mixing a polyamide resin with an alcoholic compound and then adding EVOH to the mixture (English patent abstract and [0004] of machine translation).

Regarding instant **claims 5, 13, 14 and 23** both Kuriu and Yamamoto [0007] teach EVOH which fulfills the recited ethylene content and degree of saponification. The EVOH used by Kuriu in examples 1 and 2 contains 32 mol% ethylene and has a 99% degree of saponification (col 3, lines 55-58).

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Regarding instant **claims 6 and 24**, Kuriu teaches that the film may contain organic additives such as antioxidants in typical amounts (col 2, lines 36-40).

Regarding instant **claim 12**, Kuriu teaches that the multilayer film is produced by coextrusion (col 2, line 50) and biaxial stretching (col 2, line 62). See also Example 1, col 3, lines 60-67.

Regarding instant **claim 27**, Yamamoto teaches that the composition has excellent transparency and retorting resistance (English abstract), and teaches the use of nylon 6 for the polyamide resin in the EVOH layer [0005, 2<sup>nd</sup> line].

Regarding **claim 28**, Yamamoto discloses the claimed ratios exactly (English patent abstract).

Regarding instant **claims 29 and 30**, Kuriu teaches that the multilayer film is produced by coextrusion (col 2, line 50) and biaxial stretching (col 2, line 62). See also Example 1, col 3, lines 60-67. In addition, Yamamoto discloses coextrusion [0012] as well as stretching by "two axes" (i.e. biaxial stretching) [0011].

Regarding instant **claim 32**, the two polyamide layers taught by Kuriu in Example 2 (column 4), fulfill the recitations of the instant claim. Both polyamide layers comprise 10 wt % aromatic polyamide. Therefore, one layer reads on the recitation of "at least

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one polyamide layer comprising aromatic polyamide in concentration of 2.0-10 wt%," while the other layer, as it contains aromatic polyamide, reads on the recitation of "at least one additional aromatic polyamide layer."

**Claims 6-8, 12 and 24-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuriu** (US 6645640) in view of **Yamamoto** et al (JP 11-199741) as applied to claim 1 above, and further in view of **Matsui** et al (JP 2002-248721).

While Kuriu teaches the addition of antioxidant to the multilayer film, Kuriu fails to specify an antioxidant, and therefore fails to teach the recitations of instant claims 7 and 8.

Matsui teaches a layered film containing a polyamide layer suitable for packing material subject to retort treatment [0001]. Matsui teaches that the polyamide film has excellent transparency and heat resistance [0002]. Matsui discloses the addition of an antioxidant to the polyamide and suggests the use of pentaerythrityl-tetrakis[3-3,5-di-*t*-butyl-4-hydroxyphenyl]propionate [0020]. Given the teaching by Matsui that the antioxidant minimizes strength reduction of the polyamide film following retort treatment [0019], it would have been obvious to one of ordinary skill in the art to add the antioxidant to the polyamide layers in the laminates taught by Kuriu and Yamamoto, in order to improve toughness of the film.

**Claim 31** rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuriu** (US 6645640) in view of **Yamamoto** et al (JP 11-199741) as applied to claim 1 above, and further in view of **Toyozumi** (JP 2002-338770).

While Kuriu teaches that the polyamide layer of the multilayer film comprises 4.0 wt% of a modified ethylene-vinyl acetate copolymer (column 3, lines 54-56), neither Kuriu nor Yamamoto teach the addition of an ethylene-methacrylic acid copolymer ionomer.

Toyozumi discloses a composition comprising saponified ethylene vinyl acetate, polyamide and an ionomer of an ethylene methacrylic acid copolymer [claim 1], [claim 5]. (Examiner note: ionomer is translated as "eye ONOMA.")

Toyozumi teaches that blends of EVOH and polyamide have nonuniform thickness, which leads to deterioration in gas barrier ("GASUBARIA") and pinhole resistance properties [0004]. Toyozumi discloses that the addition of an olefinically unsaturated carboxylic acid copolymer solves this problem [0005]. Toyozumi teaches a preferred copolymer from ethylene [0018] and methacrylic acid [0019], and teaches various metal ions for neutralization of the ionomer [0024]. Toyozumi teaches that the best gas barrier properties and pinhole resistance are achieved when the copolymer is present between 3-15 wt% [0029].

It would be obvious, therefore, to one of ordinary skill in the art, to add ethylene methacrylic acid copolymer ionomer, as taught by Toyozumi, to the modified ethylene vinyl acetate containing polyamide layers of the multilayer film taught by Kuriu in view of



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Yamamoto, in order to improve uniformity, pinhole resistance and gas barrier properties of the layer.

**Claim 32** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuriu** (US 6645640) in view of **Yamamoto** et al (JP 11-199741) as applied to claim 1 above, and further in view of **Tanaka** et al (JP 2002-172742).

Kuriu fails to teach the use of a primarily aromatic polyamide layer in the same multilayer film with a primarily ethylene vinyl acetate layer. While Yamamoto teaches the use of additional layers such as polyamide [0013], the reference fails to teach specific types of polyamide, and therefore fails to teach “aromatic polyamide.”

Tanaka teaches a biaxially stretched three layer laminate with an EVOH layer, an aliphatic polyamide layer and a xylylene (i.e. aromatic) polyamide containing layer (English patent abstract). Tanaka teaches that the laminates have excellent transparency and are highly suitable for packaging food. Tanaka discloses that layers of EVOH and polyamide are often laminated for use as packaging materials, due to the high gas barrier provided by EVOH and the pinhole resistance provided by polyamide [0002]. However, when stinky items are packaged, the smell leaks, restricting the use of such laminates for many foods [0002].

Tanaka teaches that adding an aromatic polyamide layer to a laminate of EVOH and aliphatic polyamide improves the smell retaining property of the laminate [0004] and [0012].

Given that Kuriu teaches the use of the multilayer films for packaging food (column 3, lines 24-27), it would be obvious to one of ordinary skill in the art to add a layer of aromatic polyamide, as taught by Toyozumi, to the multilayer film taught by Kuriu in view of Yamamoto, in order to improve the smell retaining property of the laminate.

**Claim 27** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kuriu** (US 6645640) in view of **Yamamoto** et al (JP 11-199741) as applied to claim 1 above, and further in view of **Shibuya** et al (JP 06-345919).

Yamamoto teaches that the polyamide and alcohol EVOH composition has excellent transparency and retorting resistance (English abstract), and teaches the use of nylon 6 for the polyamide resin in the EVOH layer [0005, 2<sup>nd</sup> line].

If not considered obvious based on the combined teachings of Kuriu and Yamamoto, as discussed above, that the multilayer transparent film disclosed by Kuriu in view of Yamamoto would inherently have the transparency and boiling resistance as recited in instant claim 27, it would be obvious in view of Shibuya.

Shibuya discloses a laminate composition comprising an inner layer of EVOH blended with polyamide and outer layers of polyamide resin (English patent abstract). Shibuya teaches that this multilayered laminate is useful as packaging for materials subject to retort or boil sterilization [0002, 0042, 0058]. Shibuya also teaches that there was no change in transparency in the three-layer laminate after 30 minutes in 95 °C water or 121 °C steam [0058 and 59].

As noted above, the multilayer film of Kuriu in view of Yamamoto is identical to the presently claimed, and identical compositions must have identical properties. Accordingly, one of ordinary skill in the art would assume that the properties of instant claim 27 are present in the films of Kuriu in view of Yamamoto, especially in view of the teachings of Shibuya.

### ***Response to Arguments***

Applicant's arguments with respect to claim 1-30 have been considered but are moot in view of the new ground(s) of rejection. However, the arguments which retain relevance to the current rejections will be addressed below.

Applicants have argued that prior references used, including Yamamoto and Matsui, teach lamination of layers using adhesives, and that as the claims contain "consisting of" language, the references teach away from the claims.

Examiner points out that Kuriu, the primary reference, teaches coextrusion to form a flat film of three layers, i.e., no additional layers or adhesive are used (column 3, lines 60-67). Yamamoto and Matsui are currently used as secondary references for their teachings which improve upon the properties of the composition of the layers taught by Kuriu, not in the assembly of the multilayer film. In response to applicant's argument, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references.

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Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In addition, while Applicant correctly points out that Yamamoto discloses using adhesives, Applicant fails to acknowledge that Yamamoto discloses an alternative method of coextrusion [0012], which does not require adhesive.

Applicant's arguments regarding canceled claim 11 (new claim 32) have been fully considered but they are not persuasive. Arguments shall be addressed as they pertain to the current rejection of instant claim 32.

Instant claim 32 recites an additional aromatic polyamide layer. The claim recites no limitations regarding the amount or type of aromatic polyamide which must be present in the layer.

Applicants argue that Tanaka teaches away from the claimed film because Tanaka teaches that the aromatic polyamide layer must comprise 20-80 wt% aromatic polyamide in order to improve the smell retaining property of the film. In making this argument, Applicant appears to be confusing the "at least one polyamide layer" which requires 2-10% aromatic polyamide, and the "additional aromatic polyamide layer," which has no such composition requirements.

Tanaka is being relied upon for its teaching to add an "additional aromatic polyamide" layer (layer Z, [0012] in Tanaka) to the multilayer film disclosed by Kuriu in view of Yamamoto. Tanaka in no way teaches away from the claimed invention,

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especially in view of the fact that Tanaka discloses a multilayer film which comprises an EVOH layer (X) [0008], a layer of aliphatic polyamide (Y) [0009], and an additional polyamide layer which is aromatic (Z) [0012].

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RACHEL KAHN whose telephone number is (571)270-7346. The examiner can normally be reached on Monday to Friday 8:00 am to 5:00 pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RACHEL KAHN/  
Examiner, Art Unit 1796

Rk

/Randy Gulakowski/  
Supervisory Patent Examiner, Art Unit 1796